

Elaps filiformis (Gthr.).

An adult example from Bogota differs from the typical specimen in having two postoculars. Ventral shields 295.

Atractaspis rostrata. Pl. XIX. figs. I.

Head broad, depressed; snout slightly turned upwards, the rostral shield being provided with a sharp anterior edge, and extending backwards for some distance between the anterior frontals; two pairs of frontals. Vertical extremely broad; one præ- and one postocular; five upper labial shields, the third and fourth entering the orbit; temporals 1+1, the anterior descending between the fourth and fifth labials: a very long lower labial shield corresponds to the third, fourth, and fifth upper labials. Scales in twenty-three rows. Body elongate. Ventrals 227-244; subcaudals simple, 22 or 23.

Two specimens, 22 inches long, were sent by Dr. Kirk from Zanzibar. This is the fifth species of this genus in the Collection of the British Museum.

XLIX.—*On the Terrestrial Mollusca of Dominica and Grenada; with an Account of some new Species from Trinidad.*

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Part I. DOMINICA.

DOMINICA is, I believe, the only island in the Antilles of which no list of terrestrial Mollusca has yet been published. In Mr. Bland's Catalogue, in the 'Annals of the New York Lyceum,' still the most complete list we possess of the land-shells of the West Indies, it is stated that no species from Dominica were known to the author. To remedy this defect, I took advantage of a vacation to visit and explore that island, which I found to consist chiefly of mountains composed of volcanic rocks, and ranging from 2000 to 5000 feet high. This is perhaps the highest land in the chain of the West-Indian Islands between Jamaica and South America.

There is but little which may be properly called lowlands in Dominica; but on the lower slopes near the sea I found a few Mollusca, chiefly *Bulimulus exilis*, *Stenogyra octona*, *Succinea approximans*, and *Helicina humilis*. Ascending higher, we find *Helix dentiens*, *H. badia*, *H. Josephineæ*, *H. nigrescens*, *Amphibulima patula*, *Bulimulus laticinctus*, and *Helicina epistilia*. Excepting the last one, these species are found everywhere above 300 or 400 feet of elevation. The dense and excessively humid forests which cover all the higher

parts of the island afford a congenial habitat to the land-snails. An ascent of Mount Kuliabon, 3000 feet high, furnished me with examples of the four *Helices* already mentioned, *Hyalina Baudoni*, *Amphibulima pardalina*, *Cyclotus amethystinus*, and *Glandina perlucens*. On Morne Diablotin, at the north end of the island, I found *Hyalina Baudoni*, the four *Helices* *Helicina rhodostoma*, *H. conuloides*, *H. plicatula*, *H. velutina*, *Amphibulima pardalina*, *Cyclotus amethystinus*, and *Glandina perlucens*. On the very summit of this mountain, stated to be 5314 feet high, I collected *Helix badia*, *H. Josephinæ*, and *Helicina conuloides*. *Amphibulima pardalina* is another species fond of the thickly wooded heights; but several of the Mollusca (e.g. *Helicina rhodostoma* and *Cyclotus amethystinus*) appeared to cease at about 3300 feet.

The general aspect of the molluscan fauna of Dominica is precisely what we might have expected from its position between the islands of Guadelupe and Martinique, the land-shells of which are well known. Of the total of twenty species determined by me, eleven are found in the neighbouring islands, whilst I have considered nine to be undescribed.

1. *Glandina perlucens*, n. sp.

Testa subulato-turrita, lævis, diaphana, fusco-flavida, vix striatula, lineis distantibus ornata; apex obtusissimus; anfractus 7, parum convexi, lente accrescentes, ultimus applanatus, spiræ longitudinem circiter æquans; sutura valde impressa; columella valde torta, truncata; peristoma simplex, margine externo aliquanto prominente.

Long. 16 millim., lat. maj. 4 millim.; apert. alt. 4, lat. 2.

A subulate-turrite, smooth, brilliantly polished, yellowish-red shell, marked by obscure striæ and by distant variciform lines, of which there are from three to six on a whorl; with a very obtuse apex and seven slowly increasing, scarcely convex whorls, the last somewhat flattened and equal to about half the length of the shell; columella strongly curved, truncate; aperture oval, elongate; peristome simple, its external margin somewhat prominent.

A species allied to *G. arcuata*, Pf., of Jamaica. Of three examples I obtained, one only was of full growth.

2. *Stenogyra octona*, Chemn.

3. *Hyalina Baudoni*, Petit.

I was rather in doubt whether to refer the Dominican shell to this species or to *H. concolor*, Fér. It appears to be rather intermediate between those two very closely allied forms. Its whorls are more like those of *H. concolor* in contour, except in

the convexity of the spire, and in that particular our shell is nearer to *H. Baudoni*; and the balance of characters is in favour of the latter name. The animal is viviparous, often containing twenty young of different sizes. The smallest shells resemble a *Bulla* in shape. The lingual teeth are like those of *H. cellaria*, and the animal is not furnished with any caudal appendage.

4. *Helix Josephinæ*, Fér.

5. *Helix dentiens*, Fér.

6. *Helix badia*, Fér.

7. *Helix nigrescens*, Wood.

These four *Helices* are common throughout the island. Their mandibles and lingual dentition are similar.

8. *Bulimulus laticinctus*, n. sp.

Testa perforata, conico-elongata, tenuis, fusca vel flava, nitida, decussata, castaneo 4-fasciata (in forma β unicolor), fascia media latior; anfr. 6, convexiusculi, regulariter accrescentes, ultimus $\frac{2}{3}$ longitudinis testæ circiter æquans; spira elongata; apex acuminatus; apertura semiovalis; peristoma simplex, acutum, vix expansum; columella torta, dilatata, reflexa.

Alt. 24 millim., lat. 10; aperturæ alt. 10, lat. 5; anfr. ult. alt. 15.

α . Shell perforate, conic-elongate, fuscous or yellow, thin, shining, decussate, zoned by four dark chestnut bands, of which two are visible on the upper whorls, the second (reckoning from the suture) being the widest; whorls 6, a little convex; peristome thin, columellar margin reflected over the narrow perforation; columella slightly twisted.

β . Like α , but yellowish or greenish, devoid of colour-bands, and somewhat broader.

A species allied to *B. multifasciatus*, but narrow and relatively more elongate, and with only four wide colour-bands.

9. *Bulimulus exilis*, Gmelin.

10. *Bulimulus stenogyroides*, n. sp.

Testa rimata, turrita, elongata, cylindrica, parum nitens, albidocornea sub epidermide brunnea, sinuato-striata; anfr. (? circa 5-6) convexiusculi, ultimus spiræ longitudinem superans; apertura elongato-ovalis, angusta, producta; peristoma simplex, acutum, marginibus callo tenui junctis; columella reflexa.

Long. — ?, lat. $5\frac{1}{2}$ millim.; apert. alt. 6, lat. $2\frac{1}{2}$; anfr. ult. alt. 10.

A rimate, turrite, elongate cylindric, scarcely shining shell, whitish horn-coloured under a brown epidermis, the striæ of

growth somewhat sinuate; whorls (? about five or six) little convex, the last narrow and forming half or more of the length of the shell; aperture narrow, rather produced anteriorly, elongate oval; peristome simple, a little effuse anteriorly, its margins joined by a thin callus on the body-whorl; columella reflexed over the narrow umbilical fissure.

I obtained a single living example of this species; but, unfortunately, the spire got broken off, so that my description is somewhat imperfect. Nevertheless it seems to be a very distinct species; and, although very like a *Stenogyra* in shape, I am inclined to place it rather with *Bulimulus*. It is, perhaps, allied to *B. montivagus*, D'Orb.; but its proportions are much more elongate relatively.

11. *Amphibulima patula*, Brug.

More common on the outskirts than in the interior of the forests.

12. *Amphibulima pardalina*, n. sp.

Testa elongato-ovalis, succinoidea, tenuis, flexibilis, diaphana, leviter decussata, fulvo notata; anfr. 3; spira parva, obtusa; apertura ampla, ante dilatata; peristoma simplex, superne inflexum; sutura descendens.

Long. 20 millim., lat. 11 millim.: spiræ alt. 3; aperturæ lat. 9.

An oval-elongate, *Succinea*-shaped, thin, flexible, somewhat diaphanous shell, finely decussate and generally marked by irregular rows of small, elongate, fulvous spots; having a small obtuse spire and a very large aperture, much dilated anteriorly. The animal resembles that of *Omalonyx unguis*, Fér. (D'Orb. Voy. Amér. Mérid. pl. 22. f. 1-7). The foot is translucent, like a bit of ice dipped in milk, the internal organs showing as a dark variegated patch about the shell, into which the body is incapable of retraction. It lives buried in the very thick moss on the trees in the higher regions of the forest, where the vegetation is always dripping with moisture. *A. pardalina* is very near to *A. tigrina* (Lesueur); but the differences induce me provisionally to assign a new name to the Dominican shell.

Forming my judgment from the soft parts and the lingual dentition, I should separate *Amphibulima* as a genus from *Succinea*. The genus *Amphibulima* might then be divided into the following groups:—

Amphibulima s. strict. Type *A. patula*.

Omalonyx, D'Orb. Type *A. unguis*.

Brachyspira, Pf. Types *A. pardalina* and *A. tigrina*.

13. *Succinea approximans*, Shuttl.14. *Cyclotus amethystinus*, n. sp.

Testa turbinato-depressa, rubra vel straminea, subdiaphana, spiraliter striata, lineæ incrementi rugosæ; spira depressa, conoidea; anfr. 5, convexi, infra læves, supra (in forma α) spiraliter lirati lineis angustioribus quam interstitia eorum (in forma β læves); umbilicus latus, profundus; apertura parum obliqua; peristoma simplex, continuum, breviter affixum, margine externo parum prominente.

Alt. $8\frac{1}{2}$ millim., lat. maj. 19, lat. min. 15.

Operculum corneum, diaphanum, externe concavum, interne cartilagineum.

α . Shell turbinate-depressed, reddish or straw-coloured, subdiaphanous, spirally striate, the striæ of growth generally rather rugose; spire depressed, conoidal; whorls 5, convex, smooth beneath, lined above by spiral striæ narrower than their interstices, the last scarcely descending anteriorly. Operculum horny, diaphanous, concave externally, cartilaginous within, the nucleus projecting internally; with from ten to fourteen very narrow whorls, their rather lamellar outer edges slightly free.

β . Smooth, shining, not striate spirally, generally somewhat more depressed, deep chestnut or reddish brown; whorls a little flattened near the suture. Operculum as in α .

This is a notable species, owing to its operculum, which departs widely from that usual in this genus. In no specimen did it present the least approach to the shelly consistency of the opercula of most *Cycloti*. The spiral striation of the shell is generally very distinct, but in var. β it is altogether wanting. The present species approaches *C. popayanus* in shape, being, however, a little more depressed; and it is not closely allied.

15. *Helicina plicatula*, Pfeiffer.

Some examples of this species are reddish, and some are yellow.

16. *Helicina epistilia*, n. sp.

Testa orbiculato-conoidalis, solidiuscula, lineis incrementi striata, rubro-brunnea vel obscure flava; spira elevata, apex acuminatus; anfr. 5, paulum convexi, inferne applanati; sutura paululum crenulata, parum descendens; apertura parva, semiovalis, lata æque ac alta; peristoma anguste reflexum, parum incrassatum; callus basalis tenuis, vix distinctus; columella simplex.

Alt. $5\frac{1}{2}$ millim., lat. $8\frac{1}{2}$.

Operculum pallide corneum.

An orbiculate-conoidal, obscurely yellowish or reddish shell,

striate by lines of growth; spire raised, with a pointed apex; whorls 5, moderately convex, flattened beneath; suture somewhat crenulate, slightly descending; aperture rather small, as broad as high; peristome narrowly reflexed. Operculum pale horn-coloured.

A species akin to *H. Dysoni*, but without colour-bands. It has a more convex form and a flatter base than *H. barbata* (Guppy), and in the former of these particulars it is more like some examples of *H. foveata*, Pf.

17. *Helicina humilis*, n. sp.

Testa orbiculato-depressa, lineis incrementi regulariter et dense striata, pallido-fusca; spira brevis, depressa; apex vix acuminatus; anfr. circa 4, carinati, superne applanati, ultimus paulo productus; apertura obliqua, semiovata; columella brevis, in nodum terminans; callus basalis amplus, tenuis, leviter circumscriptus.

Alt. 4 millim., lat. 7.

Operculum corneum, ad marginem rubescens.

A depressed pale-fusca *Helicina*, striate obliquely by very close and regular lines of growth; whorls about 4, flattened above and carinate on the periphery; aperture oblique, semi-ovate; peristome somewhat thickened and dilated.

Allied to *H. velutina* and *H. subfusca*, but generally smaller and more obscurely coloured. Most examples, though living, have a weathered appearance, which exhibits the close striation very plainly. It may possibly prove to be a marked variety of *H. velutina*.

18. *Helicina velutina*, n. sp.

Testa orbiculato-depressa, oblique valde striata, rubro-brunnea, epidermide velutina induta; epidermis decussata, pubescentia in ordinibus punctorum exiguorum disposita; spira brevis, apex breviter acuminatus; anfr. 5, vix convexi, ad peripheriam carinati, carina distincte lirata lineis pubescentibus; apertura obliqua, semiovata; peristoma parum incrassatum et expansum; columella in nodum distincte terminans; callus basalis amplus, circumscriptus.

Alt. 5 millim., lat. 8½.

Operculum tenue, corneum, margine rubescente.

Shell depressed, somewhat strongly striate obliquely, dark brownish red, covered with a velvety epidermis, which is decussate, the pubescence disposed in rows of minute dark points; spire short, apex somewhat pointed; whorls five, keeled on the periphery, the keel bearing two or three distinctly marked spiral lines of pubescence; base little convex, very decidedly decussate.

A species somewhat like *H. subfusca*, but distinguished by

being more keeled, by its pubescence, and by its basal callus and columellar knot.

19. *Helicina rhodostoma*, Gray.

A handsome species, variable as to colour, often nearly white. The expanded peristome varies from white, through orange and red, to a deep chestnut. The operculum of all my specimens is large, thin, and horn-coloured. The spine at the base of the columella is also of variable length, and sometimes it is obsolete.

20. *Helicina conuloides*, n. sp.

Testa conica, trochiformis, tenuis, lævis, nitens, diaphana, rubro-brunnea; spira conica, elevata; apex acuminatus; anfr. 6, vix convexi; apertura leviter obliqua; peristoma tenue, rectum; columella in callum albidum et circumscriptum dilatata.

Alt. 4 millim., lat. $5\frac{1}{2}$.

Operculum tenue, diaphanum, margine interno paulo incrassato.

A conic-trochiform, thin, smooth, shining, diaphanous, reddish-brown *Helicina*, with an elevated conic spire and a pointed apex; whorls 6, scarcely convex; aperture slightly oblique; peristome thin, straight; columella dilated into a whitish, rather circumscribed, not very large callus. Operculum thin, diaphanous, somewhat thickened on the inner margin.

Allied to *H. trochulina*, D'Orb. (Moll. de Cuba, tab. 20. f. 10-12). It differs in being scarcely so high relatively, in its more pyramidal form, and its thinner peristome, which is not expanded; its colour, also, is reddish brown, instead of yellow. One of my examples was furnished with two opercula. I have named the species from its great resemblance, in colour, shape, and texture, to the shells of the subgenus *Conulus* of *Zonites*.

Part II. GRENADA.

1. *Veronicella lævis*, Fér.

Vaginulus Sloanei, Fér. (Guppy).

2. *Conulus vacans*, Guppy.

It has been suggested to me that this mollusk, which I described as occurring in Trinidad, is possibly the same as *Stenopus lividus* of Guilding. I had, however, made a careful comparison of Guilding's figure, and it seemed to me that the two were distinct, although there can be little doubt that both mollusks belong to the same group. I venture to think, how-

ever, that, in view of their affinities, the name *Conulus* is the proper one for the group. The name *Stenopus* cannot be allowed to stand, having been preoccupied for a crustacean. Such shells as *Conulus semen-lini* and *C. Gundlachi* are evidently not separable from the present group. The mucus-pore and retractile appendage on the truncate tail are found in the genus *Nanina* and also in *Zonites* (as restricted in 'Die Heliceen' of Albers); and *Conulus vacans* has also the median part of the foot defined as in *Nanina* (e. g. *Helicarion Freycineti*). I think, therefore, that the best classification will be to refer to *Zonites* all those species (of the group now under consideration) in which a caudal appendage exists. *Conulus* will thus form a section of *Zonites* comprising the minutely perforated trochiform species. To the group *Ægopsis* will be assigned those species having shells like *Stenopus cruentatus*, Guild., *S. Guildingi*, Bland, and *Helix nitensoides*, D'Orb. The genus *Hyalina* will then consist of the species, such as *H. cellaria* and *H. nitens*, which have no caudal appendage.

3. *Helix diminuta*, C. B. Adams.

4. *Helix perplexa*, Fér.

I did not collect this species myself; but I have received examples of it from a former Governor of Grenada, His Excellency Mr. Keate.

5. *Plekocheilus glaber*, Gmelin.

var. *grenadensis*.

This differs from the Trinidad shell described by me as *P. auris-sciuri* in its greater solidity and more ventricose figure, and in being less impressed in the middle of the last whorl. Its lip is thicker, and its columellar tooth more prominent. In all these respects, except the compression of the last whorl, it agrees better with the Brazilian *P. glaber* than the Trinidad form does.

6. *Bulimulus indistinctus*, n. sp.

Testa subperforata, tenuis, oblongo-conica, ventricosa, pallido-brunnea vel lutescens; anfr. 6, regulariter accrescentes, ultimus ventricosus, $\frac{2}{3}$ testæ longitudinis æquans; spira conica, apex acuminatus; apertura oblongo-ovalis; peristoma simplex, acutum, haud expansum; margine columellari reflexo.

Long. 23 millim., lat. 12; aperturæ long. 11, lat. 6.

Shell subperforate, somewhat thin, oblong-conic, rather ventricose, pale reddish brown or inclining to yellowish white; whorls 6, gradually increasing, the last somewhat ventricose, equal to about two-thirds of the length of the shell; spire

conic, sharp; aperture oblong oval; peristome acute, not expanded; columellar margin reflexed over the narrow umbilicus. The dimensions given above are those of a typical example.

This shell is probably nearest to *B. tenuissimus* and *B. sepulchralis*. It is larger than either of those species, and approaches to *B. liliaceus* in some respects.

7. *Tornatellina lamellata*, Pot. & Mich.

The Grenada shell to which the name *T. Funcki* is applied in Bland's list (1861) is identical with the form from Trinidad which has recently been described by Dr. Pfeiffer as *T. Blandiana*, and which I refer to the *T. lamellata* of Potiez and Michaud.

8. *Stenogyra caracasensis*, Reeve.

9. *Stenogyra octona*, Chemn.

10. *Stenogyra plicatella*, Guppy.

The description of this species will be found under Part III., Trinidad. The Grenada specimens are intermediate between the vars. α and γ . They were probably included in Bland's list as *St. subula*, Pfeiff.

11. *Ennea bicolor*, Hutton.

12. *Succinea approximans*, Shuttl.

13. *Cyclotus grenadensis*, Shuttl.

This is very nearly allied to *C. rugatus*, Guppy. It may be distinguished by the comparative smoothness of the last whorl, upon which, in *C. grenadensis*, the wrinkled striae become obsolete. The present species is of a lighter colour than *C. rugatus*.

14. *Helicina Heatei*, Pf.

I did not collect this species.

Part III. TRINIDAD.

With one exception, the species now described have not hitherto been recorded from Trinidad; and most of them are minute and of rare occurrence. *Stenogyra plicatella* was included in my list in the 'Annals' (ser. 3. vol. xvii. p. 50) as *Bulimus octonoides*, Adams, from which, however, I find it is very different. *Zonites Guildingii*, *Helix bactricola*, and *Helicina ignicoma* inhabit the mountains of Aripo.

The proportion of minute species of shells in Trinidad is

somewhat noticeable. Not less remarkable is the rarity of individuals—so much so that travellers may be pardoned for having doubted if land-shells exist in Trinidad. The only exception is perhaps *Stenogyra octona*. *Bulimus oblongus* and *Cyclotus translucidus*, however, are rather abundant in some very restricted localities. A contrast to this is presented by the Antilles, where an hour's ramble or a search amongst almost any group of balisiers or grove of trees is generally rewarded by examples of the more abundant species.

1. *Spiraxis simplex*, n. sp.

Testa cylindrico-turrita, longitudinaliter sinuato plicata, lutescens, epidermide straminea induta; anfr. 8-9, vix convexi, ultimus longitudinem spiræ superans; sutura incisa; apertura ovato-oblonga; columella valde torta vel reflexiuscula, truncata; peristoma simplex, supra et in mediis partibus paulo prominens.

Shell turrite, rather thin, longitudinally sinuate-plicate, whitish, covered with a light straw-coloured, somewhat shining epidermis; whorls 8-9, scarcely convex; aperture ovate-oblong; peristome simple, prominent above, receding below.

Var. α . Columella strongly twisted, broadly and obliquely truncate; aperture much dilated anteriorly.

Var. β . Larger, rimate; columella reflexed, scarcely truncate.

Dimensions of three examples.

α .	Height	14	mill.,	greatest	diam.	4,	height	of	last	whorl	$7\frac{1}{2}$,	of	apert.	$4\frac{1}{2}$
	"	12	"	"	"	5	"	"	"	"	$7\frac{1}{2}$	"	"	5
β .	"	15	"	"	"	6	"	"	"	"	$7\frac{1}{2}$	"	"	$4\frac{1}{2}$

2. *Stenogyra plicatella*, n. sp.

Bulimus octonoides, Guppy, non Adams.

Testa subulata, elongato-cylindrica, subperforata, cornea, parum nitens, sinuato-striata; anfr. 8-9, lente accrescentes, convexiusculi, ultimus ventrosus; sutura valida; apertura elongata, ovalis; peristoma simplex, supra paulo sinuatum, marginibus callo tenui junctis; columella recta, super umbilicum late reflexa.

α . Shell subulate, elongate-cylindrical, subperforate, horn-coloured, slightly shining, marked by numerous sinuate striæ; whorls 8-9, slowly increasing, the last somewhat ventricose; aperture elongate-oval; columella reflexed over the narrow perforation.

β . Generally larger; whorls flattened, and impressed in the middle by an indistinct sulcus; the last whorl not ventricose; outer margin sinuate above; aperture with its margins joined by a callus.

γ . Smaller, more slender, waxy-white, shining; columella arcuate, not reflexed, sometimes subtruncate.

This species is very variable in dimensions as well as in its other characters, as the following measurements of three varieties will show :—

α .	Length	13	millims.,	breadth	$3\frac{1}{2}$,	height	of	aperture	3.
β .	"	15	"	"	$3\frac{1}{2}$	"	"	"	2
γ .	"	9	"	"	2	"	"	"	$1\frac{1}{2}$

This is generally a longer and larger shell than *S. octonoides*, to which I had previously referred it. The var. γ also is longer, though more slender, than the Jamaican species. But *S. plicatella* is really more near to *S. subula*, Pf. In uniting the three forms now described under one name, I am guided by the characteristic striation and by the gradation of forms.

3. *Stenogyra coronata*, n. sp.

Testa obsolete rimata, subulata, cylindrico-fusiformis, albida vel cornea, costellibus distantibus ornata; anfr. 8–9, vix convexi, superiores lente accrescentes et gradati, inferiores subæquantes, ultimus parum aretatus; sutura impressa; apertura angusta, elongato-ovalis; peristoma simplex, marginibus callo junctis.

Long. 7 millim., lat. 2; apert. alt. $1\frac{1}{4}$, lat. $\frac{1}{2}$.

Shell obsoletely rimate, subulate, fusiformly cylindrical, white, adorned by low, distant, somewhat sinuate, longitudinal riblets, of which there are about eighteen on a whorl; whorls 8–9, scarcely convex, the upper ones step-like, slowly increasing, the lower ones nearly equal, the last somewhat narrowed; aperture narrow; peristome simple, its margins joined by a narrow callus on the body-whorl.

Allied to *S. gracillima*, Pfr., Cuba. The group *Melaniella*, of which this is a member, appears to be related to *Cylindrella*, whilst the forms like *S. plicatella* and *S. octona* seem to approach *Spiraxis*.

4. *Zonites Guildingi*, Bland.

Stenopus Guildingi, Bland, in Ann. Lyc. N. H. New York.

I would refer to what I have said under Part II., Grenada, when treating of *Conulus vacans*, for my reasons for rejecting the name *Stenopus*.

This shell is so like *Hyalina cellaria*, Müll., that, were a dozen examples of each mixed together, it would be difficult to assort them. The animal differs, according to Bland, in having a caudal appendage, and is therefore referable to *Zonites*, and not to *Hyalina*. I have only found this species on the heights of Aripo, 2000 to 2700 feet high, and have had no opportunity of examining the animal. Mr. Bland's examples were from Porto Cabello in Venezuela.

5. *Zonites implicans*, n. sp.

Testa minuta, discoidea, aperte et late umbilicata, albida, pellucida, nitens; anfr. 4, depressi, superne applanati, lente accrescentes; spira applanata; apertura suborbicularis.

Alt. $\frac{1}{2}$ millim., lat. maj. 2; apert. alt. $\frac{1}{2}$.

A minute, discoidal, widely umbilicate, whitish, smooth, shining shell, with four depressed, slowly increasing whorls, flattened above; spire scarcely, if at all, rising above the last whorl; aperture suborbicular.

This is distinguished from *Z. umbratilis* by the absence of striation, by its planorbiform shape, depressed spire, and wider umbilicus, and by its large suborbicular aperture, scarcely encroached upon by the penultimate whorl.

6. *Zonites umbratilis*, n. sp.

Testa minuta, depressa, profunde umbilicata, distincte et regulariter striata, diaphana, cornea vel albida; anfr. $5\frac{1}{2}$ –6, lente accrescentes; spira convexa, depressa; apertura lunaris; peristoma simplex.

Alt. $\frac{3}{4}$ millim., lat. $1\frac{1}{2}$; apert. alt. $\frac{1}{2}$.

A minute, depressed, deeply umbilicate, horn-coloured shell, distinctly and regularly striate; whorls five and a half or six; spire convex, depressed; aperture lunate; peristome simple.

This species has a wider and deeper umbilicus than the last, showing all the whorls. Some examples are a good deal more depressed than others, and approach *Z. implicans* in that respect; but the striation is a definite character. It is possible that these two species may, upon examination of the soft parts, prove not to have caudal appendages, and will then be referable to *Hyalina*, not to *Zonites*.

7. *Helix bactricola*, n. sp.

Testa pyramidalis, conoidea, perspective umbilicata, dense radiatim costellata, corneo-fusca; anfr. 7, angusti, lente accrescentes, ultimus ad peripheriam valde carinatus; spira conica; apex lævis, nitens; apertura angulariter subovalis, leviter obliqua; umbilicus infundibuliformis, $\frac{1}{3}$ latitudinis testæ circiter æquans; peristoma simplex, acutum, margine columellari parum dilatato.

Alt. $2\frac{1}{2}$ millim., lat. 4.

A small, pyramidal, deeply umbilicate, fuscous-horny *Helix*, with seven narrow, slowly increasing, closely costellate whorls, the last carinate on the periphery; spire conic, apex smooth, shining; umbilicus infundibuliform, about one-third the width of the shell; peristome simple, acute, columellar margin slightly dilated.

This little shell is ornamented in a manner similar to *H.*

diminuta and *H. perspectiva*; but it is much more conical than those species or any of their allies that I am acquainted with, having in this respect more of the shape of *H. labyrinthica*, Say.

8. *Bulimulus tenuissimus*, Fér.

A species not hitherto distinguished by me from *B. fraterculus*. If the Trinidad form now recorded is really *B. tenuissimus*, it differs from Antillian examples in having a narrower mouth.

9. *Pupa uvulifera*, n. sp.

Testa umbilicata, cylindrica, paulum ovata, leviter striatula, corneobrunnea, parum nitens; anfr. 5-6, convexi; apertura semiovata, plicis munita, plica parietalis verticalis, lamelliformis; margo externus incrassatus, reflexus, margo columellaris late reflexus; umbilicus apertus, haud profundus.

Long. 3 millim., lat. 1.

Allied, probably, to *P. jamaicensis*. It is of somewhat stouter figure than that species.

10. *Pupa auriformis*, n. sp.

Testa subperforata, ovata, brunnea, subpellucida, leviter striata, vix nitens; anfr. $4\frac{1}{2}$ -5, convexi, ultimus dimidiam longitudinem superans; spira brevis, convexa, apex obtusus; apertura semiovalis, auriformis, plica parietali munita; peristoma incrassatum, reflexum, margine externo valde sinuato, margine columellari late reflexo.

Long. 2 millim., lat. $1\frac{1}{2}$.

Distinguished from the last by its shorter and more ovate figure.

11. *Helicina ignicoma*, n. sp.

Testa orbiculato-conoidalis, radiatim sinuato costellata, tenuis, subdiaphana, nitens, subrufa; spira brevis, conoidalis; apertura oblique semiovata; columella brevissima, simplex; peristoma anguste expansum et reflexum, margine basali parum sinuato; callus basalis tenuis, albidus.

Alt. 3 millim., lat. maj. $4\frac{1}{2}$, lat. min. 4.

Operculum tenue, diaphanum.

An orbiculate conoidal *Helicina*, sculptured with numerous fine, oblique, somewhat sinuate riblets; with five whorls, the last somewhat carinate; aperture oblique, semiovate; peristome narrowly expanded and reflected; basal margin slightly sinuate.

Very closely allied to *H. rugosa*, Pf. (Cuba), and scarcely less so to *H. plicatula* (Martinique, Dominica, &c.). One character gives a ready distinction: in the two species men-

tioned there is a sort of tooth on the basal margin of the peristome, whilst in *H. ignicoma* the basal margin is only slightly sinuate.

Note.—The shell identified by me with *Bulinus immaculatus*, Reeve, seems probably not to be that species, but an uncoloured variety of the Trinidad form of *B. multifasciatus*, determined to be *B. vincentinus*, Pf.

The *Planorbis* regarded as identical with a Cuban species should be *P. terverianus*, not *terversanus*.

Port of Spain, Trinidad, April 1868.

L.—*Carcinological Gleanings.* No. III.

By C. SPENCE BATE, Esq., F.R.S.

[Plate XXI.]

Dr. Cunningham writes me from

At sea, November 8, 1867.

(Between Monte Video and Magellan Strait.)

MY DEAR SIR,

I have long had it in my mind to write to you, as you were so good as to express a wish to hear from me occasionally during my absence from the United Kingdom, when I had the pleasure of meeting you at Plymouth last year; and I now put my intention into execution. We left Plymouth on the 8th of September, 1866, but encountered such a severe gale that after battling with it and vainly attempting to run into Brest, we were forced to return to the Sound on the 10th, and lay there till the evening of the 17th, when we again set forth, and, after a rather rough passage, reached Madeira, where we remained for about a week. Unfortunately, we were placed in quarantine for the first five days of our stay, so that I was not able to see nearly as much of the island as I wished. So much has been said of the wonderful beauty of Madeira that I will not enlarge upon it, but content myself with observing that I think it is about the most lovely place I have seen since I left home. I accomplished a little dredging in the Bay of Funchal, and obtained a variety of Mollusca, chiefly belonging to European types. A *Dentalium* was specially abundant in the fine mud of the bottom, existing in hundreds. I, however, met with no Crustacea. I had a delightful ride up the Grand Canal on the 2nd of October; and on the evening of the same day we left Madeira for St. Vincent, in the Cape Verde group. There we arrived on the forenoon of the 9th, and remained four or five days, in the course of which I had some pleasant rambles. I need hardly say that St. Vincent is noted for its extreme